

ABSTRACT

A system of permitting stack allocation in a program with open-world features is described. The system includes an escape analysis module to (1) determine which objects of the program can be stack-allocated under a closed-world assumption and (2) analyze, after stack

5 allocation, which stack allocation is invalidated due to the occurrence of an open-world feature.

A stack allocation module is provided to stack-allocate these objects based on the determination of the escape analysis module. A stack allocation recovery module is provided to recover those invalidated stack allocations back to their original allocation in heap based on the analysis of the escape analysis module. A method of permitting stack allocation in a program with open-world

10 features is also described.